ON THE OCCURRENCE OF *HELIX LACTEA* MÜLLER IN NORTH AMERICA

BY HENRY VAN DER SCHALIE

In the course of some studies of the Naiades of the Ogeechee River in northeastern Georgia, Dr. E. P. Creaser called my attention to the fact that an unusual land shell inhabited Cockspur Island, a small island located in the mouth of the Savannah River. Upon investigation the species was found to be *Helix lactea* Müller. According to Mr. W. J. Clench credit for the discovery of this exotic species should go to Mr. A. J. Nitzsche who sent specimens to him a long time ago. Although Mr. Clench intended to publish a note regarding this discovery, he has kindly submitted what information was available for this account.

The question as to how *Helix lactea* became established on Cockspur Island cannot be answered with any degree of certainty. Dr. Creaser suggested that this species might have carried from its normal haunts in the western Mediterranean by ships which temporarily stopped at Cockspur Island to deposit stone carried as ballast before these ships proceeded to the river-port of Savannah where they took on their load. This suggested origin has some degree of likelihood, particularly since piles of such ballast are still found much in evidence on the island.

At present the species is prospering well on the vegetation surrounding the old, historic Fort Pulaski which commands a prominent position on the island. We found *lactea* confined to the yucca or Spanish bayonet (*Yucca* sp.). At the time the collection was made a drizzling rain was falling and active specimens were found moving about on the leaves of the yucca. Those not active were found clustered near the bases of the leaves.

Another colony of *Helix lactea* was reported in 1931 by Mr. Wm. G. Fargo who found them in the region of his home at Pass-a-Grille, Florida. In this case we are more fortunate in learning something about the origin of the colony. Mr. Fargo reports that the snails were introduced by the owner of a curio shop in Pass-a-Grille, who imported them from Morocco along with other snails. The snails were scattered around on Long Key, on which Pass-a-Grille is located, and also on two smaller keys, Mud Key

and Cabbage Key, which are eastward across Boca Ciega Bay (*cf.* Henderson, NAUTILUS 50: 72).

The acclimatization of *H. lactea* on these three keys as here reported by Mr. Fargo is of interest. Evidently Mud Key is little more than a mangrove bar and the snails did not prosper there. On Cabbage Key they did well for a time while feeding on castor bean (*Ricinus communis* L.) foliage. This island was later abandoned by its tenant, the castor beans were destroyed, and subsequently Mr. Fargo noted that he was no longer able to find *H. lactea* there. On Long Key this species is now fairly common. Here it is found on papayas (*Carica Papaya* L.) and mostly on a large, coarse lily which is locally called "milk and wine lily." On inquiry Mr. Fargo was informed by a reliable nursery in St. Petersburg that this lily was *Crinum Kirki.* Species of *Crinum* are so numerous in cultivation that it is hazardous to attempt any indication of species here. The depredations of *H. lactea* in feeding on these lilies have caused the inhabitants of Pass-a-Grille to consider the snail a nuisance.

The above information leads us to believe that *H. lactea* is at present confined to but two localities in North America. The fact that a considerable area extends between these points as a potential range for this species should not be overlooked. On the basis of what is known of *H. lactea* in its native haunts we can safely assume that it does well where the yucca thrives. But we now have evidence that it will adapt itself to feeding on other foods, such as the castor bean and certain species of *Crinum,* as mentioned above. K. H. Jones (Journ. Conch. IX, 1900, pp. 368) reports that *H. lactea* in its normal range is preyed upon by parasitic diptera and coleoptera which deposit their eggs in this snail. One might well raise the question as to what the future history of *H. lactea* will be in North America where it may not be held in check by its predators and where there may be a wide variety of foods to which it can adapt itself.

George W. Tryon (Manual Conch., Vol. 4, 1888, p. 130) gives the distribution of *Helix lactea* as: "Spain, Canary Islands, North Africa; introduced into Cuba, Buenos Ayres and other Spanish colonies." In substantiation of the West Indian records, Mr. W. J. Clench informs me that there are specimens in the M. C. Z.

collection from Jamaica and Cuba. Unfortunately, neither of these collections have specific locality data. The labels do indicate, however, that this species was definitely introduced into those islands, but whether it is still living there is uncertain. When we consider that *lactea* normally ranges through the region of Gibraltar, a great cross-road in the commerce of the world, the potential passive distribution of this species becomes tremendous.

REMARKS ON SOME OF DR. PAUL BARTSCH'S EXPERIMENTS

BY HENRY VAN DER SCHALIE

In the recent report of Dr. Paul Bartsch at the Seventh Annual Meeting of the American Malacological Union, results on some experimental breeding of *Goniobasis* in cages placed at stations in the Potomac River were of considerable interest. These breeding experiments were virtually a failure due to unusual silting conditions. However, an unexpected discovery was made. To quote the article: "Greatly to the surprise of the experimenters in one of the cages specimens of *Anodonta cataracta* Say were found with eight annulations, one measuring 66.2 mm. in length, 40.0 mm. high and with a diameter of 19.3 mm. This would indicate that annulations must not be taken as an indication of year marks."

In this quotation it is clearly stated that "annulations must not be taken as an indication of year marks." If this is true we are faced with a major problem since much of the better work with mussels in the past has been based on methods which use annual rings in the determination of age. Since Dr. Bartsch has raised this question, it would be highly desirable for him to supply us with experimental data sufficient to disprove the work of Hessing, Rubbel, Coker, Isely, Chamberlain and others. Their investigations have clearly indicated that age in mussels can be determined by annual rings.

An analysis of Dr. Bartsch's work shows that there may be an explanation for the results he obtained. In the first place, his experimental work was not carefully checked since he visited his stations only once in ten months. Furthermore, he will learn, if